Installation Guide

NXB-KNX NetLinx NXB-KNX Interface

Overview

The NetLinx NXB-KNX interface (FG2031-01) allows AMX NetLinx Integrated Controllers the ability to control, integrate and communicate with homes and buildings that utilize the KNX communication protocol.

KNX is the world's first open, royalty free, and platform independent standard for home and commercial building control.

FIG. 1 NXB-KNX Interface

Product Specifications

NXB-KNX Specifications	
Front Panel Components:	• Status LED (green): Blinks once a second to indicate that the unit has powered up. Any state other than blinking once a second indicates the unit is either not powered, or has not completed boot up. • KNX LED (green): Solid on indicates power is on and the unit is connected to KNX bus. • Output LED (red): Lights to indicate traffic from the NXB-KNX to the KNX bus. • Input LED (yellow): Lights to indicate traffic from the KNX bus to the NXB-KNX.
Rear Panel Connectors:	• KNX 2-pin captive-wire connector: • Ethernet Port - 10/100 Ethernet with PoE. LEDs show communication activity, connection status, speeds, and mode information: SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets.
Power Requirements:	• PoE powered – no local Power Supply needed • IEEE 802.3af Compliant
Memory:	• 64 Mbytes of RAM • 256 Mbytes of FLASH
Dimensions (HWD):	With feet: • 1.66" x 5.54" x 4.10" • 4.216 cm x 14.07 cm x 10.42 cm Without feet: • 1.52" x 5.54" x 4.10" • 3.861 cm x 14.07 cm x 10.42 cm
Weight:	1.45 lbs. (0.65 kg)
Operating Environment:	• Operating Temperature: 32°F - 104°F (0°C - 40°C) • Relative Humidity: 5% to 85% non-condensing • *Intended for indoor use only*
Included Accessories:	Black 2-Pin 5mm Phoenix connector with captive screws
Other AMX Equipment:	• AC-DIN-CS3 DIN Rail Mounting Bracket (FG532-01) • PS-POE-AF PoE Injector (FG423-80)
Certifications:	• FCC Class B • CE • IEC60950 • RoHS

Wiring and Connections

***Note**: To avoid any damage to the electronic component, installation must be performed in an ESD safe environment.*

***Note**: Do not connect power to the NXB-KNX until the wiring is complete.*

The NXB-KNX is installed between the NetLinx Master and the KNX control bus, and passes NetLinx control commands to the KNX control bus via 2-wire twisted pair cabling, as indicated in FIG. 2:

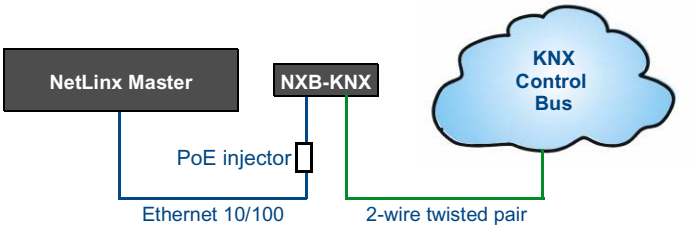

FIG. 2 NXB-KNX installation

After completing the installation, consult the Using the Configuration Manager section of the *NXB-KNX NetLinx Interface Operation/Reference Guide* for instructions on specifying IP and Security settings, via the NXB-KNX WebConsole.

Ethernet 10/100 Base-T RJ-45 Wiring Configuration

The table below describes the pinouts, signals, and pairing for the Ethernet 10/100 Base-T connector and cable.

Ethernet Pinouts and Signals				
Pin	**Signals**	**Connections**	**Pairing**	**Color**
1	TX +	1 --------- 1	1 --------- 2	White-Orange
2	TX -	2 --------- 2		Orange
3	RX +	3 --------- 3	3 --------- 6	White-Green
4	no connection	4 --------- 4		Blue
5	no connection	5 --------- 5		White-Blue
6	RX -	6 --------- 6		Green
7	no connection	7 --------- 7		White-Brown
8	no connection	8 --------- 8		Brown

FIG. 3 diagrams the RJ-45 pinouts and signals for the Ethernet RJ-45 connector and cable.

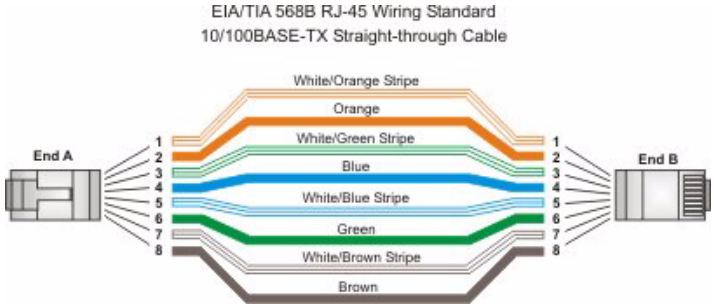

FIG. 3 Straight-Through Wiring

PoE (Power Over Ethernet)

The NXB-KNX uses CAT5/CAT6 wire via the Ethernet port for PoE power.

Use the PS-POE-AF Power over Ethernet Injector (FG423-80) to simplify wiring and installation by eliminating the need for an AC outlet at each point of installation.

***Note**: The NXB-KNX can be placed up to approximately 330' (100 meters) from the nearest PoE Injector.*

- If used with a non PoE-capable Ethernet switch (such as the NXA-ENET24), then an optional PS-POE-AF Power-over-Ethernet (PoE) power supply is required to provide power to the NXB-KNX.
- If the NXB-KNX is used with a PoE-capable Ethernet switch (such as the NXA-ENET24PoE), then no PoE Injectors are required.

KNX Connector

The KNX connector on the rear panel is a 2-pin captive-wire connector that provides communication between the NXB-KNX and the KNX control system via 2-wire shielded twisted pair cabling (FIG. 4).

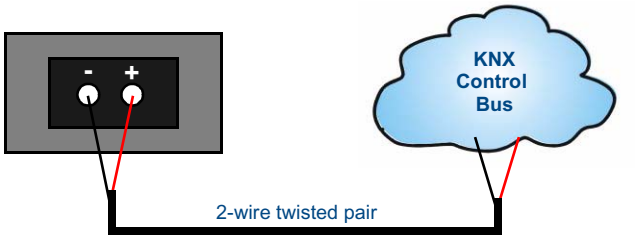

FIG. 4 KNX Connector wiring diagram

Configuration

NXB-KNX units have a built-in WebConsole that allows you to make various configuration settings via a web browser on any PC that has access to the Master. The web console consists of a series of web pages that are collectively called the "NXB-KNX Configuration Manager".

Determining the IP Address of the NXB-KNX

NXB-KNX units feature a built-in zero-configuration networking client that allows you to determine the unit's IP address via Bonjour or a similar zero-configuration client. Zeroconf (also known as "Bonjour") technology provides a general method to discover services on a local area network. In essence, it allows you to set up a network without any configuration, as described below.

Zero-Configuration (Bonjour) Client

You will need a zero-configuration client to determine the IP address of the NXB-KNX. There are many zero-configuration clients available. However, for the purposes of this document, we will refer to the Bonjour plugin for Internet Explorer. It is free and widely available for download.

If you don't already have it installed on your PC, download and install *Bonjour for Windows* before you begin.

***Note**: The NXB-KNX is set to **DHCP** by default. Bonjour requires DHCP to discover the device, so don't change this setting until you have identified the unit on your network.*

1. With *Bonjour for Windows* running on a PC that has access to the LAN that the NXB-KNX resides on, connect the NXB-KNX to the network (see the *Wiring and Connections* section).
2. In Bonjour, you will see the unit join the network at power up.
3. In Bonjour, click on the NXB-KNX link and it will access the unit's Configuration Manager (IP Settings page).
4. The unit's IP Address is displayed in the *IP Settings page*.

At this point you can assign a new IP Address if necessary.

Accessing the WebConsole

From any PC that has access to the LAN that the NXB-KNX resides on:

1. Open a web browser and type the IP Address of the target NXB-KNX unit in the Address Bar.
2. Press Enter to access the WebConsole for the specified NXB-KNX unit. The initial view is the *IP Settings* page.

Admin Menu

There are several configuration pages included in the Configuration Manager, all of which are accessed via the *Admin* drop-down menu (FIG. 5):

FIG. 5 NXB-KNX Configuration Manager -Admin menu

Click on an option in this menu to access each of the configuration pages, as described in the following sub-sections:

Security Settings

Select **Security Settings** from the Admin drop-down menu to open the *Security Settings* page. Use the options on the page to specify security options and login information for this NXB-KNX unit.

Enable / Disable Security Settings

Web Security:	Click this checkbox to enable Web Security. When Web security is enabled, a username and password are required to access any system Web pages (default = disabled).
Telnet Security:	Click this checkbox to enable Telnet Security. With Telnet Security enabled, a username and password are required to establish a Telnet or SSH connection (default = disabled).
Admin Security:	Click this checkbox to enable Admin Security. With Admin Security enabled, a username and password are required to modify any system configuration item (default = disabled).
Restore Factory Defaults:	Click to restore all security settings to their factory default (all disabled).

Login Information

Use this set of options to specify a Username and Password. These will be required only if one or more of the Security Settings are enabled.

Username:	Enter the Username that will be required to login to this unit id security is enabled.
New Password:	Enter a new password that will be required to login to this unit if security is enabled.
Confirm Password:	Re-enter the new password in this field.
Restore Factory Defaults:	Click to restore the login information to the factory defaults: • Default Username = **administrator** • Default Password = **password**

- Click **Accept** to save your changes, changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

IP Settings

Select **IP Settings** from the Admin drop-down menu to open the *IP Settings* page. Use the options on the page to specify network/IP settings for this NXB-KNX unit.

DHCP:	Click to toggle DHCP on this unit (default = enabled). ***Note**: DHCP must be enabled in order for the zero-configuration client (i.e. Bonjour for Windows) to detect the NXB-KNX on the network.*
Hostname:	Enter a Hostname for this unit (enabled only if DHCP is disabled.
IP Address:	Enter an IP Address for this unit (enabled only if DHCP is disabled).
Subnet Mask:	Enter a Subnet Mask for this unit (enabled only if DHCP is disabled).
Gateway:	Enter a Gateway for this unit (enabled only if DHCP is disabled).
Domain Suffix:	Enter the Domain Suffix for this unit.
DNS 1, 2, 3:	Enter up to three DNS addresses for this unit.
Reboot:	Click to initiate a system reboot. IP Settings changes only take effect after a reboot.

Additional Documentation

Refer to the *NXB-KNX Operation/Reference Guide* (available to view/download at www.amx.com) for additional configuration information, including instructions on using the Clock Manager, Application and Firmware upgrades.

For full warranty information, refer to the AMX Instruction Manual(s) associated with your Product(s).

93-2031-01 REV: C

8/08

©2008 AMX. All rights reserved. AMX and the AMX logo are registered trademarks of AMX.
AMX reserves the right to alter specifications without notice at any time.

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 • 800.222.0193 • fax 469.624.7153 • technical support 800.932.6993 • www.amx.com